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Regulations and Course of Study

OF THE

PUBLIC SCHOOLS

OF THE

PROVINCE OF ONTARIO

AMENDED AND CONSOLIDATED

1911

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

ONTARIO
DEPARTMENT OF EDUCATION

TORONTO:
Printed and Published by L. K. CAMERON, Printer to the King's Most Excellent Majesty
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PREFATORY NOTE

The Public School Regulations are being revised and will be ready for distribution about the close of the present year. In the meantime, the Regulations of 1911 now reprinted will remain in force until further notice.

Printed by WILLIAM BRIGGS, Toronto.

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Regulations and Course of Study

OF THE

PUBLIC SCHOOLS

NUMBER OF TEACHERS AND CLASS ROOMS

1. Subject to the recommendation of the Inspector of Public Schools, an additional teacher and class room shall be provided by the Board of Public School Trustees when the average attendance of any school or grade or class thereof under its charge exceeds forty-five for two consecutive years.

NOTE 1.—As used hereafter in the Public School Regulations, Board means Board of Public School Trustees; Inspector, Inspector of Public Schools; and School, Public School.

NOTE 2.—In the case of schools with more than one teacher, teacher in these regulations means the principal unless the contrary is evident from the context.

NOTE 3.—The requirements as to site, accommodations, and equipment of Rural Schools are given in Circular 33. The copy of the circular which has been sent to each Board should be kept in the School Library. The pamphlet entitled "Plans for Rural School Buildings" has also been sent to each Board. It also should be kept in the School Library.

POWERS OF TEACHERS

2.—(1) (*a*) Subject to revision by the Inspector, the teacher shall determine the number of grades, the number of pupils to be assigned to each grade and class, and the order in which the subjects shall be taken up by the pupils.

(*b*) Subject to revision by the Inspector, the teacher shall make such promotions from one grade to another as he may deem expedient.

NOTE.—The Public Schools Act quoted on pp. 29-31, defines generally a teacher's powers and duties.

3.—(*a*) In every school where there are more teachers than one, the head teacher shall be called Principal and the others Assistants.

(*b*) Subject to the Acts and the Regulations, the authority of the Principal shall be supreme in all matters of discipline.

ARBOR DAY

4.—(1) (*a*) In rural school sections and in incorporated villages Arbor Day, the first Friday in May, or a date as near thereto as climatic conditions will permit, shall be devoted to planting shade trees, making flower beds, or otherwise beautifying and improving the school grounds.

(*b*) When any date other than the first Friday in May is selected, the teacher shall notify the Inspector promptly.

(*c*) In all schools on Arbor Day songs and recitations designed to cultivate greater interest in trees and flowers and in the study of nature shall form part of the exercises.

NOTE.—**Suggestions as to the laying out of school grounds are given in the pamphlet entitled "Improvement of School Grounds," a copy of which has been sent to each Board and which should be kept in the School Library.**

EMPIRE DAY

5. Empire Day, the first school day before the 24th of May, shall be duly celebrated in every school; the forenoon being devoted to a study of the greatness of the British Empire, and the afternoon to public addresses, recitations, music, etc., of a patriotic character.

SCHOOL FLAGS

6. Except when flown on public holidays, or on other occasions by direction of the Board, the school flag shall be displayed on the wall of the schoolroom, or, when there are more schoolrooms than one, on the wall of that in which all the pupils assemble; and, as occasion may offer, its history and significance shall be suitably explained to the pupils by the teacher.

DUTIES OF PUPILS

7.—(1) A pupil registered in a Day or a Night School shall attend punctually and regularly.

(2) He shall be neat and cleanly in his person and habits, diligent in his studies, kind and courteous to his fellow pupils, obedient and respectful to his teacher; and he shall submit to such discipline as would be exercised by a kind, firm, and judicious parent.

8.—(1) A pupil on returning to school after absence shall give the teacher from the parent or guardian, orally or in writing, as may be required by the teacher, a proper reason for his absence.

(2) A pupil may retire from school at any hour, with the consent of the teacher, or at the request either oral or written, of his parent or guardian, provided that in the opinion of the teacher and the Board this privilege is not being abused.

(3) A pupil shall be responsible to the teacher for his conduct on the school premises and on the way to and from school, except when accompanied by his parent or guardian or by some person appointed by such parent or guardian on his behalf.

9.—(1) On the report of the teacher a Board may suspend a pupil whose parent or guardian fails or neglects to provide him with the text-books or other supplies required in his course of study, or to pay the fees imposed for such purpose by the Board.

(2) On the report of the teacher a Board may suspend a pupil who injures or destroys school property until such property destroyed is made good by the pupil or his parent or guardian.

CARE OF THE TEETH

10.—(1) In any case where a petition is presented signed by a majority of the parents or guardians of children attending the Public Schools, and where provision has been made, without charge, by any Dental Hospital Board for the care of the teeth of the children of parents or guardians unable to pay for the same the Public School Board of any city, town or incorporated village may pass a resolution requiring that every pupil attending the Public Schools of such city, town or village shall be required once every six months either to produce, to the teacher of the school at which such pupil attends, a certificate from a duly qualified dental surgeon stating that the teeth of such pupils are in a sound and healthy condition and do not require dental treatment, or submit to have his teeth examined by a dental inspector to be appointed as hereinafter provided.

(2) Every such School Board may by resolution appoint a duly qualified dental surgeon to be dental school inspector for such city, town or incorporated village at such salary as such School Board may see fit, and it shall be the duty of such inspector to visit the Public Schools of such city, town or incorporated village for which he is appointed every six months and to make an examination and inspection of the teeth of all Public School pupils attending such Public Schools who shall not have produced the certificate provided for in (1) preceding.

(3) It shall be the duty of every teacher of a school so visited by such dental inspector to require every pupil to be so examined, to submit to such examination, and for such purpose he shall direct that such pupil shall accompany such dental inspector to the hall of such schoolroom or other convenient part thereof apart from the other pupils, there to be so examined by such dental inspector.

(4) Such inspector upon such examination being made shall forthwith report to such teacher in writing whether the teeth of such pupil are sound and healthy or whether they require treatment by a dental surgeon.

(5) It shall be the duty of the parent or guardian of every pupil whose teeth are found to be in such condition as to injure the health of the pupil or other children attending the school to have the teeth of such pupil properly treated forthwith by a dental surgeon, and no such pupil shall be permitted to attend such school until he has produced a certificate to the teacher from a dental surgeon stating that the teeth of such pupil have been properly treated and cared for.

SCHOOL TERMS AND SESSIONS

Day Schools

11.—(1) Unless otherwise directed by the Board, as provided in (3) below, the pupils attending a Day School shall assemble for study at nine o'clock in the forneoon, and shall be dismissed not later than four o'clock in the afternoon.

(2) At least one hour shall be allowed for recreation at mid-day, and ten minutes during each of the forenoon and afternoon sessions.

(3) In no case shall the hours of study be less than five hours a day, including the recesses in the forenoon and afternoon; but the Board may reduce the hours of study for the pupils in the Kindergartens and in the First and Second Forms.

Night Schools

12.—(1) Children over fourteen years of age, who are not registered in a Day School, may attend a Night School from the 1st of October until the 31st of March.

(2) The hours of study in the Night School shall not exceed two and a half each session.

(3) Night Schools shall be subject to the same regulations as Day Schools, with respect to the discipline of pupils, the duties and qualifications of teachers, and the use of text-books.

(4) The subjects of study shall be selected from the Course of Study for the Public Schools by the Inspector with the concurrence of the Board.

ORGANIZATION

13.—(1) The Kindergarten Course is optional.

(2) (*a*) The rest of the Course of Study shall be taken up in five Forms as hereinafter set forth.

NOTE.—In the Course of Study, Forms I and V have been divided each into a Junior and a Senior Grade. Each of the other Forms may also be so divided and any Grade may be divided into as many classes as the Inspector and the Principal may determine.

(*b*) Regularly the Course of Study in each of the forms requires two years; but, in all the grades, pupils shall be classified by the teacher in accordance with their aptitude and attainments.

(*c*) Such modifications of the details of the Course as may be necessitated by local conditions may be made by the teacher, with the concurrence of the Inspector.

NOTE.—*The details of the Course of Study, with the methodology thereof, are given in the Teachers' Manuals, which will be published by the Department in the Autumn of 1911. A copy of each Manual will be supplied to every School Library.*

(*d*) The time-table of the school shall be prepared by the teacher and approved by the Inspector. A copy of this time-table shall be kept posted in a conspicuous place in the classroom.

(3) (*a*) Pupils who have passed the Junior High School Entrance examination, and such other pupils as are considered qualified by the teacher and Inspector,

shall be entitled in both rural and urban schools to receive instruction in the subjects of the Fifth Form; but in a rural section or an urban municipality having a High or Continuation School it shall not be obligatory for the Board to maintain a Fifth Form, if resident pupils of the High or Continuation School are not charged fees for the Lower School.

(*b*) In lieu of establishing a Fifth Form, the Board of any rural section may arrange with the Board of a High or Continuation School which, in the opinion of the Board and the Inspector, is readily accessible, for the instruction thereat of such pupils of the section as are entitled to admittance to a High or Continuation School.

OBLIGATORY SUBJECTS OF STUDY

14.—(1) The following subjects of the Course of Study are obligatory:

(*a*) Reading, Literature, Composition, Spelling, Grammar, Geography, History, Writing, Arithmetic and Mensuration, and Physiology and Hygiene.

(*b*) Vocal Music (when the teacher is competent) and Physical Culture are also obligatory.

(2) In Forms I-IV of schools with two or more teachers, Art and Nature Study are obligatory in addition to the subjects prescribed in (1) above.

(3) In Form V (*a*) Art and Elementary Science and Agriculture or (*b*) Bookkeeping and Business Papers are obligatory, in addition to the subjects prescribed in (1) above.

(4) From the other subjects of the Course for each of the five Forms the Inspector shall, with the concurrence of the Board, prescribe in addition such subjects or parts thereof as in his judgment are practicable under the conditions of the school section or municipality.

NOTE 1.—Under this regulation, it is the duty of the Inspector and the Board to see that as many of the optional subjects are taken up as local conditions may justify. One or more of Art, Nature Study, Sewing, Cookery and Manual Training shall be taken up wherever they can be provided for.

NOTE 2.—In schools preparing candidates for admission to the High Schools, all the subjects for the examination are, of necessity, to be taken up.

(5) (*a*) The Latin, Greek, French, and German of the Lower School of the High Schools may be taken up in the Fifth Forms of schools with two or more teachers, with the concurrence of the Inspector, and with a time-table approved by him.

(*b*) Teachers of Latin, Greek, French, or German in Form V, shall hold at least a First Class certificate and have passed a Departmental or a University examination in the language they undertake to teach.

ENGLISH-FRENCH AND ENGLISH-GERMAN SCHOOLS

15. In school sections where the French or the German language prevails, the trustees may, in addition to the Course of Study prescribed for Public Schools, require instruction to be given in Reading, Grammar, and Composition to such pupils as are directed by their parents or guardians to study either of these languages, and in all such cases the authorized text-books in French or German

shall be used. But nothing herein contained shall be construed to mean that any of the text-books prescribed for Public Schools shall be set aside because of the use of the authorized text-books in French or German.

PUBLIC SCHOOL COURSE OF STUDY

Kindergarten

16. The Purpose of the Kindergarten.—The Kindergarten combines the nurture of the home with the rational discipline of the School, and is accordingly the introduction to the First Form of the Public Schools. Through the Songs, Games, and Stories, ideals of right living on the plane of the child's life are made clear and self-compelling; and, through the Material, the intellectual powers are nourished, the senses are trained, interest is stimulated, constructive imagination is cultivated, and a basis is laid for the formation of good intellectual, moral, and physical habits. The Kindergarten thus preserves the freedom and play spirit of early childhood and at the same time prepares the child to be an intelligent, orderly, and industrious pupil of the school.

17. Subject to any instructions issued by the Minister from time to time, the following is the course of study for the Kindergarten:

(1) Religious Instruction.—The Kindergarten shall be opened in the morning with a suitable prayer and hymn. The religious instruction should be given through the ideals in the songs and games, and through talks, stories, and pictures.

(2) Manners and Morals.—Throughout the course the teacher should incidentally, through the songs, games, talks, and stories, from current incidents, and by her own example, seek to establish good habits in morals and in manners. The outline of duties suggested for the Forms should be used as a guide.

(3) The Gifts: (*a*) *Symbolic*—First Gift.—Plays emphasizing activity; plays emphasizing recognition of qualities (form, colour, number), position, recognition of right and left hand; plays emphasizing imitation and analogy.

Second Gift.—Plays emphasizing discrimination through activities and qualities; plays emphasizing imitation and analogy, using the parts of the Second Gift separately and collectively; recognition of type forms; twirling plays.

(*b*) *Building,* including the Third, Fourth, Fifth and Sixth Gifts.—Play exercises in recognition of the material of each Gift; discovery of the possibilities of each Gift through combinations of forms and numbers; original building; free inventions in symmetrical designs; sequences; play exercises developing imitation, memory, ability to follow directions; simple building problems.

(*c*) *Laying.*—Tablets.—Play exercises in the recognition of the different forms; possibilities of combination; picture-making, original, suggested or directed; development of symmetrical designs in units and borders; sequences.

Sticks.—Play exercises in picture-making, original, suggested or directed, emphasizing measurement and number; development of symmetrical designs in units and borders; sequences.

Rings.—Play exercises in picture-making; simple forms made by combination of whole rings of different sizes; simple designs in units and borders, using whole rings; exercises introducing whole, half, and quarter rings of different sizes as children develop power to handle material.

(4) Occupations: (*a*) *Sewing.*—Outlining of picture cards, developing observation of outline and of colour; sequences developing power of original combination, using lines of varied lengths and positions; original designs.

(*b*) *Art.*—Exercises in correct use of pencil and brush; recognition of standard colours; freehand expression with soft pencil, coloured crayon (or water colours) in illustrating drawing and in representation of natural forms and common objects.

(*c*) *Weaving.*—Simple sequences in number combinations; free designing; development of choice in harmonious colour and combinations.

(*d*) *Folding.*—Sequences of life forms and symmetrical designs developing manual dexterity and accuracy; free expression.

(*e*) *Cutting.*—Exercises in use of scissors by stripping and fringing, combining into simple objects; illustrative picture-posting; simple sequences of Froebelian cutting; freehand cutting.

(*f*) *Modelling.*—Exercises in modelling simple objects; recognition of type forms; free expression; simple decorative plaques.

Occupations, such as peas-work, stringing, sand table, and raffia, to be used as supplementary to the work of the regular Gifts and Occupations.

(5) Songs and Games.—Careful selection of Songs and Games adapted to the age and the experiences of the children, embodying high ideals in good language, set to suitable music; simple marches, rhythms; games developing physical activity and control, sense discrimination, and dramatic expression.

(6) Stories.—Selected according to the age and experiences of children, from the Bible, fairy stories, life of nature, stories of other children, fables, historical tales.

(7) Nature Study.—Awakening of children's interest in nature, through observation of its phenomena throughout the year; buds, leaves, flowers, fruit, seeds; care of winter plants, garden plots; sun, moon, and stars; domestic and pet animals; common birds, conspicuous insects; excursions.

(8) Language.—Constant and definite attention to the development of language power throughout the Kindergarten Course.

(9) Physical Culture.—Definite attention to the physical development of the children, through the games, rhythmical exercises, and gestures of the songs, as well as through the use of the material. Defects to be studied and remedied where possible. Free play, out of doors, under supervision, is extremely desirable.

Forms I—V

18. Subject to any instructions issued from time to time by the Minister, the Course of Study of Forms I-V shall be as set forth below:

Religious Instruction.—(1) (*a*) Every Public School shall be opened with the reading of the Scriptures and the Lord's Prayer, and shall be closed with the Lord's Prayer or the prayer authorized by the Department of Education; but

no pupil shall be required to take part in any religious exercises objected to by his parent or guardian. In schools without suitable waiting-rooms or other similar accommodation, if the parent or guardian demands the withdrawal of a pupil while the religious exercises are being held, such demand shall be complied with and the reading of the Scriptures shall be deferred in inclement weather until the closing.

(*b*) To secure the observance of the preceding regulation, the teacher, before commencing a religious exercise, shall allow the necessary interval to elapse, during which the children or wards of those, if any, who have signified their objection, may retire.

(*c*) If, in virtue of his right to be absent from the religious exercises, any pupil does not enter the schoolroom in the morning till the close of the time allowed for religious exercises, such absence shall not be treated as an offence against the rules of the school.

(*d*) When a teacher claims to have conscientious scruples in regard to opening or closing school as herein prescribed, he shall notify the Board to that effect in writing; and it shall then be the duty of the Board to make such provision as it may deem expedient for the carrying out of the requirements of (1) (*a*) above.

(2) (*a*) The Scriptures shall be read daily and systematically. The parts to be read may be taken from the book of selections adopted by the Department for that purpose, or from the Bible, or from the list of the Selected Scripture Readings of the International Bible Reading Association, as the Board by resolution may direct.

(*b*) The Board may also order the reading of such parts by both pupils and teachers at the opening and the closing of the school, the repeating of the Ten Commandments at least once a week, and the memorization of passages selected from the Bible.

(3) (*a*) (i) A clergyman of any denomination shall have the right, and it shall be lawful for the Board to allow him, to give religious instruction to the pupils of his own denomination, in each school-house, at least once a week, after the hour of closing the school in the afternoon.

(ii) Under the same conditions, a clergyman, selected by the clergymen of any number of denominations, shall also have the right to give religious instruction to the pupils belonging to such denominations.

(*b*) If the clergymen of more than one denomination apply to give religious instruction in the same school house, the Board shall decide on what day of the week the school house shall be at the disposal of each, at the time above stated.

(4) Emblems of a denominational character shall not be exhibited in a Public School during regular school hours.

Morals and Manners.—Throughout the Course the teacher shall incidentally, from current incidents, from lessons in literature, history, etc., occasionally by anecdotes and didactic talks, and by his own example as well as by precept, give instruction in moral principles and practices and in good manners.

The following outline of duties is suggested:—

To oneself: Manliness or womanliness, purity, health, nobility, self-control, self-reliance, generosity, truthfulness, industry; cultivation of moral courage, will power, economy; good taste in dress, etc.

To teachers: Respect, obedience, punctuality, neatness, order, etc.

In the home: Respect for parents, due consideration for brothers and sisters, other relations, etc.

To people generally: Honesty, courtesy, charity, toleration, justice, respect for property, etc.; consideration for the aged, the infirm, etc.

To our country: Love, loyalty, courage, honour, obedience to law, etc.

Treatment of the lower animals: Humanity, kindness, etc.

Manners: Proper language and conduct at home, at school, on the street, in public places, at social gatherings, etc.

PHYSICAL CULTURE.—The main object of the course is the symmetrical development of the body, securing at the same time strength and grace, with full and prompt obedience to the will. A systematic and well-organized course of physical exercises, both free and with apparatus, should be taken up in each of the grades. While dependent to some extent upon the accommodations and the equipment, the exercises should always be suitable in character and frequency to the age and physical condition of individual pupils. Special attention shall be given to classroom exercises. The unconstrained but suitable position of the pupils in walking, in their seats, and on the floor should receive due attention. Prevailing defects should be studied and exercises and directions given to correct them. School games and sports should be systematically encouraged. Free play under the supervision of the teacher is indispensable, especially in the lower forms.

NOTE.—"The Syllabus of Physical Exercises for Public Elementary Schools," which the Minister has authorized, and a copy of which will be supplied to each School Library, shall form the basis of the course in Physical Culture.

Form I—Junior

READING.—Intelligent and intelligible natural reading; word and sentence recognition by means of the phonic, word, sentence, or combination method; subject-matter based upon objects and their qualities, actions, pictures, stories, rhymes, etc., and read from the blackboard and the Primer; simple dramatization; exercises in breathing, articulation, and vocalization.

SPELLING.—Easy phonic words; transcription and simple word-building.

LITERATURE.—Memorization of easy selections; telling by the teacher of suitable stories; the reproduction or the reading by the teacher of suitable literary selections.

COMPOSITION.—Lessons to be wholly oral: narratives of personal experiences; reproduction of Bible stories and of stories of primitive people and of child life in other lands, told by the teacher; attention to language in all school work; correct enunciation and pronunciation.

WRITING.—Development of letter forms; attention to the proper position at the desk of body, pencil, and paper; exercises at desk and blackboard to acquire ease of movement and lightness of stroke.

ARITHMETIC.—Development of the number idea through the use of objects; analysis and synthesis of numbers to 10; single column addition, the sum not to exceed 20; half, fourth, pint, quart, gallon, peck, inch, foot, yard, taught objectively; oral problems involving one operation; numeration and notation to 50.

GEOGRAPHY.—Observation of the local surroundings of the school; general notions of direction and time; simple observations of the weather and seasons.

ART.—Freehand expression with charcoal, chalk, black and coloured crayons and pencils with large, soft leads, in illustrative drawing and in the representation of natural forms and common objects; the six standard colours; simple decoration of constructed objects.

MANUAL TRAINING.—Paper cutting; free cutting and mounting; paper folding and simple geometric figures and objects based on the folded square; modelling in clay or plasticine: free modelling as a means of expression in connection with the home and school life and representation of simple natural objects; weaving simple fibres; sewing on coarse canvas.

VOCAL MUSIC—(*For Schools using Tonic-Solfa and Staff Notations*).—The tones, Doh, Me, Soh, Ta, and Ray, in all keys; measures of two, three, four and six pulses; whole pulse tones and continuations, and half-pulse tones; Kindergarten songs, and simple rote songs.

(*For Schools using Staff Notation only*).—The tones Doh, Me, Soh, in all keys; whole, half, and quarter notes, in simple times, with quarter-note beats; the Treble Clef; simple rote songs.

Form I—Senior

READING.—Intelligent and intelligible natural reading: The First Book; general course for the Junior Grade reviewed and extended; supplementary books and selections.

SPELLING.—Oral and written spelling from the First Book, and other sources; transcription and easy word-building; attention to spelling in all written work.

LITERATURE.—The First Book; selections from supplementary books; memorization of easy selections; the telling by the teacher of suitable stories; the reproduction or the reading by the teacher of suitable literary selections.

COMPOSITION.—Brief oral and written expression in complete sentences, of thoughts suggested by observation of objects, animals, plants and pictures; narration of personal experiences; reproduction of stories about famous persons, places, and peoples; dramatization; correction of common errors in speech.

WRITING.—The course of the Junior Grade reviewed and extended; use of the pen with easy freehand movement begun.

ARITHMETIC.—Course of the Junior Grade reviewed; notation and numeration to 1,000; addition tables; additions of one, two, and three columns; subtraction of numbers composed of not more than three digits; multiplication by 2, 3, and 4; meaning of one half, one fourth, one eighth; Roman notation to 20; easy problems, involving not more than one operation, oral and written.

GEOGRAPHY.—Observation of the forms of land and water in the neighbourhood; simple observations of the sun and moon; activities of the home and vicinity.

ART.—Freehand expression with charcoal, chalk, black crayons or large soft lead pencils, coloured crayons or water colours, in illustrative drawing and in the representation of natural forms and other common objects; the appropriate decoration of constructed objects; figures and capital letters; the study of pictures.

MANUAL TRAINING.—Course of the Junior Grade reviewed, with more difficult forms and more attention to details.

VOCAL MUSIC. (*For Schools using Tonic-Solfa and Staff Notations*).—The course of the Junior Grade continued and extended; the complete major scale; half-pulse continuations.

(*For Schools using Staff Notation only*).—The course of the Junior Grade continued and extended; the complete Major Scale in all keys; eighth notes, in simple times, with quarter-note beats; rote songs.

Junior and Senior Grades

HAND-SEWING.—Simple talks on tools and materials used; needle drill; knots; terms used in sewing; simple stitches with wool on canvas; making articles, applying stitch forms; canvas sampler; neatness and cleanliness of work; attention to position of the body.

NATURE STUDY.—Domestic and pet animals; conspicuous insects, their habits and development; common birds of summer and winter; garden plots through the seasons; buds, leaves, fruits, and seeds; care of window plants; love of nature developed by observation of and conversation upon natural objects.

PHYSIOLOGY AND HYGIENE.—General observations of the body; simple lessons on the hair, teeth, skin, and nails, and on the care of the organs of the senses; very simple lessons on eating, drinking, breathing, sleeping, and cleanliness, for the purpose of forming good habits; the course to be, as far as possible, a phase of observational work.

Form II

READING.—Intelligent and intelligible natural reading: the Second Book; supplementary reading; exercises in breathing, articulation, and vocalization; more advanced phonic exercises.

SPELLING.—Written spelling to predominate; transcription and word-building; simple homonyms; contracted and abbreviated forms; proper names as required; suitable dictation from the Second Book, the Speller, and other sources; attention to spelling in all written work.

LITERATURE.—The Second Book; fairy and folk stories; fables and nursery rhymes; stories and poems illustrating Nature Study lessons, and appropriate to the time of the year and to the various school holidays; reading aloud by the teacher of suitable selections; learning and reciting of suitable selections in both poetry and prose.

COMPOSITION.—Oral and written reproduction of stories told or read; transcription; original written work begun; narration of personal experiences and observations; simple letter writing; faulty expressions corrected; knowledge of sentence forms extended and improved; elementary idea of the paragraph; study of capitals, abbreviations, and punctuation begun; attention to enunciation and pronunciation in all school work.

WRITING.—Correct position and pen-holding; practice at desk and blackboard to develop the correct forms of small letters, capitals, and figures, with movement exercises to acquire ease and control of movement; spacing and joining; copy-books or graded exercises.

ARITHMETIC.—The course of Form I reviewed and extended; numeration and notation to millions; addition, subtraction, multiplication, and division; factoring begun; measuring with standard units continued; objective development of fractions to tenths; Roman notation to 1,000; problems, oral and written, involving not more than two operations.

GEOGRAPHY.—Observation of local land and water forms continued; representation by modelling and drawing of typical surface features actually observed by the pupils; soils; observation of weather; changes and characteristic features of each season; outline study, on a globe, of the earth as a whole: its form, rotation, axis, poles, equator, its hot, temperate and cold parts; relative position of the continents; occupations and modes of life of the leading people in each; characteristic animals and plants; the oceans, their relative positions and some characteristics of each; the map of the world introduced; people of the locality, their nationalities; child life in other lands; places of geographical or historical interest in the neighbourhood.

HISTORY.—Bible stories; stories of famous persons; pioneer life in Canada, with local references; early discoverers and explorers; development of present social conditions; elementary lessons in local government.

PHYSIOLOGY AND HYGIENE.—The Course of Form I reviewed and extended; simple lessons on digestion, play, exercise, cleanliness of body, clothing, desks, use of door mat, use of individual towels; general effects of tea and coffee; bad effects of alcohol and tobacco upon children.

ART.—Freehand expression with charcoal, brush and ink, water colours, coloured crayons, and pencils with large, soft leads, in illustrative drawings, and in the representation of natural forms and of other common objects and of simple landscapes; tints, shades, and hues of colour; simple design, applied where possible to constructed objects; lettering; picture study.

NATURE STUDY.—Economic and conspicuous insects and birds; wild and domesticated animals; gardening for the seasons; farm weeds; storing of grains, seeds, and vegetables; wild flowers and forest trees; soils; germination and growth.

MANUAL TRAINING.—Paper cutting and folding of Form I continued; cardboard modelling; geometric construction of the square, rectangle, and circle, and the construction of objects based on these forms; the course of Form I in clay modelling continued with a wider range of objects and more attention to detail; illustration of land and water forms.

HAND-SEWING.—The course of Form I reviewed and extended; use of tape measure; selvedge and raw edge; hems and seams on cotton cloth; cutting out simple patterns; more advanced stitches; application of principles in the making of simple articles; sewing on buttons; patching; simple knitting; neatness and cleanliness of work; attention to position of body.

VOCAL MUSIC (*For Schools using Tonic-Solfa and Staff Notations.*)—The tones of the Major Scale in all keys; quarter pulse divisions, the silent pulse and silent half pulse; unison songs; introduction of two-part songs and exercises.

(*For Schools using Staff Notation only*).—The tones of the Major Scale in all keys; dotted notes; whole pulse rests; time signatures; simple duple, triple, and

quadruple times, with half-note and eighth-note beats; simple unison songs, learnt by note.

Form III

READING.—Intelligent and intelligible natural reading; The Third Book; supplementary reading; use of the dictionary taught and practised; exercises in breathing, articulation, and vocalization; drill exercises, as in preceding grades, particular attention being given to pause, distinctness of enunciation, correctness of pronunciation, and the proper use of the voice in speaking and reading.

SPELLING.—Transcription and more advanced word-building; more difficult homonyms; contractions and abbreviations; attention to the chief inflected forms; technical terms and proper names as required; the simpler spelling rules; dictation from the Third Book, the Speller, and other sources; attention to spelling in all written work.

LITERATURE.—The Third Book; suitable supplementary literature; the learning and reciting of suitable selections in both prose and poetry.

COMPOSITION.—Emphasis on clear, consise, and coherent speech; original narratives and descriptions; simple business as well as friendly letters; the planning of compositions; special attention to sentence forms; exercises in contracting and expanding statements; the study of the paragraph continued; direct and indirect narration; the mechanics of the written sentence; attention to language in all school work.

WRITING.—Correct position and pen holding; exercises to secure accurate letter-forms and to acquire freedom and control of movement; spacing and joining; copybooks, or graded exercises prepared by the teacher; business papers; self-criticism.

ARITHMETIC.—The course of Form II reviewed and extended; numeration and notation; simple rules; bills and accounts; simple cash accounts showing income and expenditure, and bank accounts showing deposits and withdrawals; reduction and compound rules; vulgar fractions begun; use and meaning of per cent. and its relation to fractions; simple measurements; factors; problems, oral and written.

GEOGRAPHY.—Elementary notions of the sun, moon, stars, and earth in space; the position on a map of the world of the continents with their chief islands, and the oceans with their chief seas and gulfs and bays; elementary notions of latitude and longitude; local commerce: articles of exchange, collecting, and distributing centres, means of transportation, routes; general notions of the physical, commercial, and political geography of North America, Europe, Asia, South America, Africa, and Australia; the Dominion of Canada as a whole and its Provinces, Ontario in particular; the Mother Country; the British Empire; study of the Geography Reader recommended by the Minister of Education; supplementary reading.

NOTE.—The Geography Reader will be ready early this autumn.

HISTORY.—Stories of people and events famous and important in the history of Britain and Canada, as set forth in the History Reader as recommended by the Minister of Education; supplementary reading; great events of current world history; the elements of the civil government of Ontario and the duties of citizenship.

Physiology and Hygiene.—The course of Form II reviewed and extended; health talks on sunlight, fresh air, cleanliness, food, exercises, sleep, disease germs in air; prevention and cure of consumption; study of the Hygiene Reader recommended by the Minister of Education; supplementary reading.

Art.—Representation with charcoal, brush and ink, water colours, coloured crayons, and soft lead pencils, of plants, trees, landscapes, and common objects involving simple freehand perspective; grouping of two objects; illustration; scales of value, and simple harmonies; simple design, applied wherever possible in connection with constructive work; lettering; picture study.

Nature Study.—Bird types, injurious and beneficial insects; animals in relation to man; study of soils and water; garden and farm work for the seasons; care of fruit and shade trees, lawns, and window boxes; common weeds; collections; effects of heat, light, and moisture.

Manual Training.—Free cutting of Form II continued; cardboard modelling; construction of objects based on the triangle, hexagon, and octagon; simple mechanical drawing; simple plans and elevations; knife work; simple objects in thin wood; the course of Form II in clay modelling continued, relief maps.

Household Science: *Hand-Sewing.*—The course of Form II continued; more advanced stitch forms; gathering and stroking; bands; sewing on buttons, hooks and eyes; plain darning; buttonholes; bias strips; tape sewing; matching pattern in cloth; simple mending; French hem; application of the preceding to the making of articles; neatness and cleanliness of work; attention to position of body.

The House.—Purpose of the home; care of the house; methods for cleaning.

Cookery.—Examination and study of equipment; measurements; principles of combustion; study of stoves and ranges and of fuels; building and care of fires; principles and practice of methods of cooking; effect of heat on the common food materials, illustrated in cooking them.

Foods.—Functions of food; elements required by the body; study of the common food materials.

The Table.—Table service and table manners; serving of meals.

Vocal Music (*For Schools using Tonic-Solfa and Staff Notations*).—The sharpened 4th, (Fe), and flattened 7th, (Ta), with simple modulations of one remove; pulse divisions of half-and-quarters, quarters-and-half, three-quarters-and-quarter, thirds; songs in two parts, from the Tonic-Solfa notation; transition from Tonic-Solfa to the Staff Notation; all tones of the Major Scale, in any key, from Staff Notation; the Treble Clef; key signatures of from one to four sharps, or flats.

(*For Schools using Staff Notation only*).—The tones of the Major Scale in all keys; key signatures of from one to four sharps, or flats; half pulse continuations, with dotted notes or ties; compound duple time; simple songs in two parts.

Form IV

Reading.—Intelligent and intelligible natural reading: The Fourth Book; supplementary reading; drill and other exercises of Form III continued and extended.

Spelling.—Word-building and derivation; special attention to homonyms; technical terms and proper names as required; inflected forms; drill on special

difficulties; the common rules for spelling; dictation from the Fourth Book, the Speller, and other sources; attention to spelling in all written work; use of dictionary.

LITERATURE.—The Fourth Book; at least four other suitable books in prose and poetry selected for each grade from a list prescribed by the Minister; supplementary literature; the learning and reciting of suitable selections in both prose and poetry.

COMPOSITION.—The course for Form III reviewed and extended; special attention to fluency, accuracy, and versatility of speech; examination of good models; correction of errors made by pupils, to be based on laws of correct usage; an elementary knowledge of the principles of effective expression; common synonyms, and antonyms; the mechanics of the sentence and the paragraph; critical attention to language in all school work.

GRAMMAR.—Formal Grammar begun: the sentence; assertive, interrogative, and imperative sentences; subject and predicate; the noun, pronoun, and verb; object, completion and modifiers; adjective and adverb; simple, complex, and compound sentences; clauses and phrases; preposition and conjunction; the interjection and the exclamatory sentence; words with more than one function; classification of the parts of speech; inflection and substitutes for inflection; the elementary principles of syntax; analysis of easy sentences; parsing.

WRITING.—The course of Form III reviewed and extended; copybooks or graded exercises; more difficult movement exercises to develop legibility, beauty, and speed; business forms to provide variety of practice; self-criticism.

BOOK-KEEPING.—The single entry day-book, cash-book, and ledger; business papers: bills, invoices, promissory notes, orders, cheques, deposit slips; exercises on detached personal accounts.

ARITHMETIC AND MENSURATION.—The course of Form III reviewed and extended; measures and multiples; vulgar and decimal fractions; percentage and its application to commercial arithmetic begun: commission, taxes, duties and customs, simple interest, trade and bank discount, insurance; simple cash accounts and bank accounts; measurements of perimeters and areas of rectangles and right-angled triangles; measurement of volume of cubes and rectangular prisms; practical problems, oral and written.

NOTE 1.—The metric system may be added to this course for those who do not go beyond this Form, but the subject will not be required for the Junior High School Entrance Examination.

NOTE 2.—The processes and problems shall be such as find *direct* application in ordinary life. Accuracy rapidity, and neatness of work shall be kept in view.

GEOGRAPHY.—The earth as a planet: Its physical features; continent structure and outline: great mountain chains, highlands, and slopes; great river basins and river systems, coast lines; winds: elementary ideas of the causes and influence of trade winds, monsoons and polar winds; ocean currents; elementary ideas of causes and influence of gulf stream, Japan current, and polar current; climate: outline of distribution of climates; distribution of plants and animals; special study of Ontario; a brief study of North and South America, Europe, Asia, Africa, Australia, and New Zealand, with reference to the principal physical and political divisions, resources, industries, productions, routes of travel and commerce, centres of population, and conditions of the peoples; more particular attention to the component parts of the British Empire.

History.—An outline of British and Canadian History; supplementary reading in biography; great events of current world history; the elements of the civil government of Canada and Ontario, and the duties of citizenship.

Physiology and Hygiene.—The course of Form III reviewed and extended; fresh air and ventilation; disease germs; the skin; the nose and throat; the teeth; foods and digestion; blood and circulation; clothing; pure and impure water; tuberculosis; dwelling houses; emergencies; general observation of bones and muscles; relation of the nervous system to health and exercise; continued study of the effects of stimulants and narcotics.

Art.—Representation with charcoal, brush and ink, water colours, or coloured crayons and soft lead pencils, of plants, trees, landscapes, objects, and animals; grouping of objects; simple freehand parallel and freehand angular perspective; illustration; colour harmonies and scales of intensity; elementary design; lettering; picture study.

Nature Study.—Bird types continued; insect pests and remedies; animals in relation to man; garden and farm work for the seasons; plant study; common weeds; forestry; improvements in agriculture; collection and classification of plants; experimental and demonstration plots in school (or home) grounds; rocks and soils; the atmosphere; the thermometer; gravity, air and liquid pressure; the barometer; simple applications of electricity and steam.

Note.—Material for the plots may be obtained through *The Director of Elementary Agricultural Education*, Ontario Agricultural College, Guelph.

Manual Training.—Cardboard modelling of Form III continued; simple bookbinding and repair of books; mechanical drawing continued in connection with woodwork; woodwork: a full course where special equipment is provided, and, in other cases, the making of objects from thin wood with knife and other simple tools; clay modelling: from nature and as a means of expression in other school subjects.

Household Science: *Sewing.*—The course of Form III reviewed and extended; darning; patching; button holes continued; plackets; cutting and making a set of white underwear for doll; use and care of sewing machine; more advanced construction, including cutting out and making white undergarments by machine sewing. Neatness and cleanliness of work to be kept in view throughout the course.

The House.—Site and plan; its furnishing; best methods of cleaning.

Cookery.—The course of Form III reviewed and extended; combination and cooking of various food materials; flour mixtures; yeasts; bread-making; preserving and canning fruit; pickling; invalid cookery.

The Table.—Table service and table manners; planning and serving of meals.

Emergencies.—Bandaging; poulticing; treatment of injuries.

Note.—The course in Machine Sewing is optional.

Vocal Music (*For Schools using Tonic-Solfa and Staff Notations*).—Staff Notation; the sharpened 4th, (Fe), and flattened 7th, (Ta); the Minor Mode; sixteenth notes, triplets and rests; the Bass Clef; songs and exercises in two parts, from the Treble Clef; songs and exercises in three parts, with the lower part in the Bass Clef, adapted to the needs of boys whose voices are changing.

(*For Schools using the Staff Notation only*).—The sharpened 4th, (Fe) and flattened 7th, (Ta); the Minor Mode; sixteenth notes, triplets, and rests; the Bass

Clef; songs and exercises in two parts, from the Treble Clef; songs and exercises in three parts, with the lower part in the Bass Clef, adapted to the needs of boys whose voices have changed.

Form V

Note.—In the programme of studies for Form V two grades have been made, in order to define the subjects for those schools which can provide only a one year's course.

Junior

Arithmetic and Mensuration: *Arithmetic.*—The elementary rules reviewed; measures and multiples; fractions (vulgar and decimal); compound quantities, including the metric system; square root; the simpler and more practical parts of commercial arithmetic; applications of percentage, including commission, taxes, insurance, duties and customs, interest, trade and bank discount, stocks, and exchange; practical problems, oral and written.

Mensuration: The rectangle, triangle, circle, parallelopiped, prism, and clyinder.

Note.—The processes and problems shall be such as find *direct* application in ordinary life. Accuracy, rapidity, and neatness of work shall be kept in view.

Algebra.—Simple rules; easy simple equations of one unknown quantity; easy factoring; highest common factor; lowest common multiple; elementary fractions and problems.

Geometry.—Definitions; fundamental geometric conceptions and principles; use of simple instruments, compasses, protractor, graded rule, set-square; measurement of lines and angles, and construction of lines and angles of given numerical magnitude; accurate construction of figures; some leading propositions in Euclidean plane geometry, reached by induction as the result of the accurate construction of figures.

Note.—The course in Geometry, which should be taken up the second half-year, emphasizes exactness in drawing lines of required length, in measuring lines that are drawn, in constructing angles of given magnitude, and in measuring angles that have been constructed. No text-book is authorized for the pupils' use, but the teacher may refer to *Baker's Plane Geometry—Inductive and Deductive.*

English Grammar.—A thorough review of the course prescribed for Form IV, with verb phrases and special constructions; the practical value of the subject in connection with English Composition to be emphasized.

Note.—The use of English Grammar in teaching correct oral and written composition though important, especially when the principles of good English can be intelligently applied, is, however, secondary to the insight it gives into the structure of our thinking and expression.

History.—A thorough review of British and Canadian History, as set forth in the Public School Histories; supplementary reading and interesting biographical sketches of persons famous in British and Canadian History; great events of current history; the elements of the civil government of Britain and Canada, and the duties of citizenship.

Note.—The main purpose of the course in Form V is to train the pupils to grasp the leading events in their logical order and to arouse an interest in historical reading. As soon as practicable a beginning should be made in appreciating the logical connection of events. Pupils should be trained to use the school, public, and other libraries for reference purposes and for supplementary reading. The work in History should be systematically correlated with that in oral and written Composition and so much Geography should be taken up as will secure intelligent comprehension of the topics dealt with.

GEOGRAPHY.—The principles of geography: the phenomena of air, earth, and sky; a fuller study of the political, commercial, and industrial geography of the course for Form IV.

NOTE.—Books of travel and other supplementary reading from the School or the Public Library should be supplied; also when practicable exhibits of the products characteristic of the countries studied; and pictures of famous places by means of mounted photographs.

ELEMENTARY SCIENCE.—An elementary practical course in Botany, Zoology, and Physics. For the details of the course, see Appendix A.

NOTE 1.—The objects of the course are to train pupils in correct observation and deduction; also to give, in connection with the instruction in Geography, a fair knowledge of the world around them to those who will not remain at school more than a few years, and to lay the foundation for the more detailed study of each subject in the case of those who will continue the work into the higher Forms. The spirit of the Nature Study of the lower forms should be retained, but the teacher shall introduce a more systematic treatment of the subject, with such organization of the material as will lead to simple classification and generalization. The course should be correlated with Geography, Drawing, and English Composition.

NOTE 2.—Each pupil should possess a good lens, and be taught how to use it. Approved methods of collecting and preserving botanical specimens and of keeping live animals suitable for study should be systematically followed. Much of the practical work, especially the observations, will necessarily be done out of doors by the pupils alone, under the direction of the teacher, or by the pupils conducted by the teacher.

NOTE 3.—The Science note books should indicate that in all important particulars the work of the course has been taken up; *but the notes shall not be dictated by the teacher.* Until the pupil understands how to record his observations, the teacher may find it desirable to have the notes made in the classroom neatly copied out afterwards; but as soon as practicable this should be discontinued, and the notes finally made in the class. Moreover, while neatness must be insisted on and drawings are essential, an unreasonable amount of time should not be spent in elaboration.

NOTE 4.—No Flora or Fauna is authorized as a text-book for the pupils, but it shall be the duty of the Board to provide in the school library a sufficient supply for the pupils' use. Other works of reference shall also be provided, and the pupils should be encouraged to use them as supplementary reading, never as text-books or as substitutes for original work. Drawing and systematic written description should be required throughout the course, dated and preserved in note-books for comparison and inspection, the work being systematically supervised by the teacher.

ART.—*Representation*: The use of pencil, charcoal, crayons, pen and ink; the drawing of the type solids in light and shade; the principles of freehand perspective and their application; the laws of composition; the use of brush and ink in studies from nature; the study of colour; the solar spectrum; the six standard colours; intermediate hues; the neutralization of colour; the nine values; harmonies of colour; the use of the brush and water-colours; the drawing and painting of common objects and of specimens from nature, such as fruits, flowers, leaves, birds and other animals; pose drawing; the illustration in line, silhouette, neutral values, and colour, of stories and school compositions; imaginative sketches; the drawing and painting of simple landscapes from nature; the mounting of drawings.

Ornamental Design.—The use of instruments; simple geometrical problems; the principles of design; geometric forms and their application; nature as a source of design; conventionalization of natural forms; the designing in neutral values and in colour, of surface patterns, such as tile or inlaid floors, wall papers, school booklets, calendars, etc; lettering.

NOTE.—The different parts of the courses may be taken up in whatever order the teacher prefers. For a list of suitable models, etc., see Appendix B.

BOOK-KEEPING AND BUSINESS PAPERS.—The course of Form IV reviewed and extended, as follows: Single entry day book, cash book, bill book, and ledger:

business papers: receipts, promissory notes, drafts, orders, deposit slips, cheques, bank drafts, bills of goods, invoices, accounts, endorsement and acceptance and consequent liability.

Note.—This course is for those pupils who can attend not more more than one year. Other pupils should take the course prescribed for the second year.

Senior

Arithmetic and Mensuration.—The course of the Junior Grade reviewed and extended; contracted methods of computation; more difficult work in Commercial Arithmetic; Mensuration: the pyramid, cone, and sphere; oral arithmetic.

Algebra.—The course of the Junior Grade reviewed and extended; simple equations of two and three unknown quantities; problems; simple exercises in involution, square root, and cube root.

Geometry.—The course of the Junior Grade reviewed and extended: deduction employed as principles are reached and assured by induction; Elementary Theoretical Geometry. For details, see Appendix C.

English Grammar.—The principles of etymology and syntax, including the logical structure of the sentence and the inflection and classification of words; the elementary analysis of words, with the most important prefixes and suffixes and Latin and Greek root-words; an elementary knowledge of the formation of the sounds of the language, with their representation by means of the alphabet; an outline of the history of the development of the language.

History.—The leading events of British and Canadian History; supplementary reading and biographical sketches of persons famous in Canadian and British history, and in Greek and Roman history; great events of current world history; more detailed study of the Civics of the Junior Grade.

Geography.—A more detailed study of physical geography, as follows: Changes of the earth's surface; the rocks; rivers, valleys, and lakes; weathering, soils, and underground waters; wind work; glaciers and their work; plains, mountains and plateaus, volcanoes, and earthquakes; the atmosphere; winds, storms, and climate; the earth's magnetism; the ocean; the meeting of land and sea; life on the earth; geological history of Canada; the earth and the sun: the solar system; other heavenly bodies.

Note.—Excursions should be made where practicable and desirable, especially in connection with the study of the rocks, minerals, soils, and land formation of the district, and of the forces that change the earth's surface.

Elementary Science.—The course of the Junior Grade in Botany, Zoology, and Physics reviewed and extended, with Chemistry in addition. For the details of the second year's course, see Appendix A.

Art.—The course for the Junior Grade reviewed, and the following subjects extended:

Representation: Drawing from casts; the principles of freehand perspective and their application: the laws of composition: the study of colour: harmonies of colour; monochrome; the drawing and painting of common objects and of specimens from nature; pose drawing: the illustration in line, silhouette, neutral values, and colour, of stories and school compositions; imaginative sketches.

Ornamental Design: Principles of design; geometric forms for practical or industrial application; nature as a source of design; conventionalization of natural forms; the designing in neutral values and in colour, of surface patterns suitable for floor coverings and textile fabrics, book covers, etc.; lettering.

Note.—In connection with the study of technique, the fac-similes of the works of great artists may occasionally be copied. (See Prang's *Text-book of Art Education*, No. 7, p. 2). The note under Art, Junior Grade, applies here also.

Book-Keeping and Business Papers.—*Business Papers*: Receipts, promissory notes, drafts, orders, deposit slips, cheques, bank drafts, bills of goods, invoices, accounts, endorsement and acceptance and consequent liability.

Book-keeping: Double and Single Entry, involving the use of journal, cash book, sales book, bill book, ledger, financial statements, and closing the books; changing from Single to Double Entry.

Note 1.—The minimum amount of work prescribed for the Senior Diploma examination is as follows:—Sets II, III, IV, (or V), VI, and XI (Part I) of the authorized text-book, or the equivalent thereof in character and amount, and a Journal entry to change Set XI from Single to Double Entry.

The foregoing sets when worked out shall take up about thirty pages of foolscap (thirty-five lines to the page) or about forty pages of letter paper (twenty-eight lines to the page).

Note 2.—*In each set and exercise, the transactions shall be dated according to the calendar of the year in which the set or exercise is worked out in the School. The name of the month in the text-book need not be changed.*

Junior and Senior

Reading.—Intelligent and intelligible natural reading; the principles to be learned incidentally; exercises in breathing, articulation, and vocalization.

English Composition.—Oral and written composition; elements of Narration, Description, Exposition, and Argumentation; letter writing; oral and written reproductions or abstracts; class debates; the systematic and careful application of the principles of good English to the correction of mistakes made by the pupils in speaking and writing.

Note.—In the courses, actual practice in writing compositions of various kinds should largely predominate. The main principles of composition (rhetoric) should be learned incidentally from the criticism of the compositions, and systematized as the work proceeds.

English Literature.—Intelligent comprehension of suitable authors, both prose and poetry; systematic oral reading in class; memorization and recitation of choice selections in prose and poetry prescribed by the Minister; supplementary reading.

Note 1.—The object of the course is the cultivation of a taste for good literature, not by minute critical study, but by reading at home and in school aloud and silently, with due attention to the meaning, standard authors whose works will quicken the imagination and present a strong element of interest. Such authors should be chiefly narrative, descriptive, and dramatic.

Note 2.—In each of the two years of the course, at least four books, prose and poetry, shall be read in addition to the regular class-work. Part of such books should be read at home or during study periods, and reviewed in class with special reference to the more difficult passages. The work in literature should be systematically correlated with that in oral and written composition.

Note 3.—After the session of 1911-12 the authors to be studied shall be selected from a list prescribed by the Minister.

WRITING.—Correct position and movement; principles of letter formation; formation of a graceful, legible business hand.

SHORTHAND.—The theory; dictation and transcription.

TYPEWRITING.—Copying documents; transcription of shorthand notes; manifolding, letter-press copying; touch system recommended.

MANUAL TRAINING.—*First Year*: Drawing and woodwork.

Second Year: Drawing and one of the following: Woodwork, Woodturning, Forging, and Machine Shop Practice. For details of the course, see Appendix D.

NOTE 1.—If the pupil has received two years' manual instruction approved by the Inspector, the course in Wood-turning outlined for the second year may be taken in place of the Woodwork of the first year.

NOTE 2.—The courses in forging may be taken only by those who have had two years in Woodworking and that in Machine Shop Practice only by those who have previously taken Forging.

NOTE 3.—As far as storage facilities will permit, the articles made should be preserved for the Inspector's examination.

HOUSEHOLD SCIENCE: Sewing, Cookery, etc.: three courses. For details, see Appendix E.

NOTE.—The First and Second Courses are to be taken by those who have not already received instruction approved by the Inspector; the Second and Third Courses, by others.

AGRICULTURE.—For details of the course, see Appendix A.

NOTE.—In the Zoology and Botany of the Elementary Science Course, the topics under Work in Agriculture may be substituted for those under Outdoor Work.

In the same course the topics: Soils, Milk, etc., detailed in Appendix A, may be substituted for the Physics of the second year where the home interests and future work of the pupils render such a choice desirable. For assistance in introducing or carrying on this work, teachers should apply to *The Director of Elementary Agricultural Education*, Ontario Agricultural College, Guelph, who will supply material for demonstration and experimental plots, as well as instruction sheets.

SENIOR AND JUNIOR GRADUATION DIPLOMAS

19.—(1) (*a*) Senior and Junior Public School Graduation Diplomas may be awarded to pupils in attendance at the Public Schools, whose conduct has been satisfactory to the Principal, and who have passed one or other of the following examinations.

(*b*) Candidates for these Diplomas shall not be required to pass the Junior High School Entrance Examination.

(*c*) Each Diploma shall show the subjects of the course.

(2) (*a*) The examination for the Senior Diploma shall be based on the subjects of the Senior Grade of Form V, as follows:

Oral Reading, English Literature, Geography, Spelling, English Composition, Writing, English Grammar, History (British and Canadian), Arithmetic and Mensuration, Algebra and Geometry, Art, Elementary Science and Agriculture, and Book-keeping and Business Papers.

(*b*) The examination for the Junior Diploma shall be based on the subjects of the Junior Grade of Form V, as follows:

Oral Reading, English Literature, Geography, Spelling, English Composition, Writing, English Grammar, History (British and Canadian), Arithmetic and Mensuration, Algebra and Geometry, and Art, with an option between (a) Elementary Science and Agriculture, and (*b*) Book-keeping and Business Papers.

NOTE.—Candidates for admission to the High Schools on the Junior Diploma should take the Elementary Science and Agriculture option, if needed for their High School course.

(*b*) The Senior Diploma shall be signed by the Minister; and the Junior, by the Inspector and the Principal.

(3) (*a*) For the Senior Diploma, the preparation and distribution of the question papers, the conduct of the examination, the reading of the answer papers, and the settlement of the results will be provided for by the Minister.

(*b*) For the Junior Diploma, the examination papers shall be prepared and distributed by the Department; but the examination shall be conducted, the answer papers read, and the results settled, by the High School Entrance Board. For this purpose the Board shall include members competent to examine in Art, Elementary Science, and Book-keeping.

(*c*) The maximum for Writing and Oral Reading for each diploma shall be 50 marks, and for each of the examination papers 100; and the standard for pass shall be 40 per cent. in each of Oral Reading and Writing and in each paper, and 60 per cent. of the aggregate marks.

(4) (*a*) The Writing at both examinations shall be judged while the answer papers are being read, from the answer papers in one of the other subjects, to be determined from time to time by the Minister in the case of the Senior and by the High School Entrance Board in the case of the Junior.

(5) (*a*) The examination in Reading at the Junior shall be conducted by a member of the High School Entrance Board selected thereby.

(*b*) The examination in Reading at the Senior shall be conducted by an examiner to be appointed by the Minister of Education.

(*c*) Both examinations in Reading shall include questions on the principles, based on the passages read.

(6) (*a*) The questions in English Literature at both examinations shall be set on sight passages, and it will be necessary for the candidate to have read, during the year preceding the examination, in addition to the works taken up regularly in class, at least four works in English Literature, both prose and poetry: and to have taken up practically, as prescribed by the Regulations, the course in Elementary Science and Agriculture. A certificate to this effect shall be required from the Principal in the official form of application. The candidate shall also be required to have memorized the selections from the High School Reader prescribed by the Minister.

(*b*) At the examinations in Elementary Science and Agriculture, an option will be allowed between the questions on the Outdoor Work in Science and the Physics of the second year and the questions on the Work in Agriculture. A certificate from the Principal shall be required that the work has been taken up practically.

(7) (*a*) At the examinations for both diplomas a report may be submitted by the principal to the Minister or the High School Entrance Board, as the case may be, signed by the teacher or teachers concerned, as to the standing of the candidates. Only the names of the candidates who, in the opinion of the teachers concerned, have completed satisfactorily the courses for the examination may be included in this report. In settling the results such value shall be attached to this report as may appear to be justifiable.

(*b*) The Senior Diploma examination will be held at the close of the school year at such centres as the Minister may select: the Junior during the same week as the Junior High School Entrance examination, and at such centres as the Inspector may determine.

(*c*) Candidates for the Senior Diploma examination shall make application to the Public School Inspector before May 1st, on an official form, to be obtained from him.

(*d*) Candidates for the Junior Diploma shall make application to the Public School Inspector before April 20th.

(8) The fee for the Senior Diploma examination shall be $5.00 and for the Junior $3.00; but, in either case or both, the Boards of the schools from which the candidates come may pay the whole or part of said fee. Both fees shall be payable to the Inspector. Of the $5 the Inspector shall forward $3 to the Department, and $2 to the Board of the School where the examination is held.

(9) *Mutatis mutandis,* the regulations for the conduct of the Junior Diploma examination and for the payment of the expenses thereof shall be the same as for the Junior High School Entrance examination.

NOTE.—(1) A candidate who obtains a Senior Diploma shall have the right to enter a Model School, on complying with the other conditions for admission, or the Middle School of a High School. This certificate will also be accepted in lieu of passing the Lower School Examination for admission to the Normal Schools or the Faculties of Education.

(2) The Principal of a High School may accept the Junior Diploma for entrance into his Lower School, but he shall have the right to place the holder of such diploma in the Form for which he deems him competent.

(3) The forms for the Graduation Diplomas will be provided by the Minister.

INSPECTION

POWERS AND DUTIES OF INSPECTORS

20 1. Every Public School Inspector while officially visiting a school, shall have supreme authority in the School, and may direct teachers and pupils in regard to any or all of the exercises of the school-room. He shall, by personal examination or otherwise as he may be directed by the Minister of Education, ascertain the character of the teaching in the schools which he is authorized to visit; and shall make inquiry and examination, in such manner as he may think proper, into the efficiency of the staff, the accommodations and equipment of the school, and all matters affecting the health and comfort of the pupils. He shall report to the Minister of Education any violation of the Schools Act or the Regulations of the Department of Education in reference to the class of schools for which he is inspector.

NUMBER AND LENGTH OF VISITS

2. (1) The following schedule sets forth the minimum number and length of regular visits of inspection to be paid each half year by each inspector to his rural and urban schools, respectively; the time being divided among the teachers of each school as the Inspector may deem necessary:

½	day's visit for each	Rural school with one teacher.
1	" " " " " " "	two or three teachers.
1½	days' " " " " " "	four teachers.
½	day's " " " Urban " "	one teacher.
1	" " " " " " "	two or three teachers.
1½	days' " " " " " "	four or five teachers.
2	" " " " " " "	six teachers.
2½	" " " " " " "	seven or eight teachers.
3	" " " " " " "	nine teachers.
3½	" " " " " " "	ten or twelve teachers.

1-3 day's visit for each teacher on a staff of over eleven.

NOTE 1.—Except for cogent reasons, in rural schools with one teacher a half day shall mean not less than two hours and a half; and in other rural schools and in urban schools it shall mean not less than a whole school half day.

NOTE 2.—Where the condition of the school renders it necessary, the length of the visit should be increased.

(2) If, owing to unavoidable causes, the Inspector cannot visit every school each half year, he may visit a school more than once in a half year, but he shall allow a reasonable interval between visits.

(3) Teachers who need additional supervision from any cause, the Inspector should visit as often as the circumstances may demand and his other official duties will permit.

NOTE.—When a new teacher is appointed, it shall be the duty of the School Board to notify the Inspector promptly of the name, grade of certificate, and length of experience of said teacher.

EXTRACTS FROM THE DEPARTMENT OF EDUCATION AND THE PUBLIC SCHOOLS ACTS

Sections 28, D. of E. Act, and 7, 82, 83, 84, 85, and 112, P. S. Act.

School Year

(1) The school year shall consist of two terms, the first of which shall begin on the 1st day of September and shall end on the 22nd day of December, and the second of which shall begin on the 3rd day of January, and end on the 29th day of June.

(2) Every Saturday, every public holiday, the week following Easter Day, and every day proclaimed a holiday by the authorities of the municipality in which the teacher is engaged, shall be a holiday in public schools.

(3) With the approval of the inspector, the board of a rural school section may substitute holidays in some other part of the year for part of the time herein allowed for Easter and midsummer vacations to suit the convenience of pupils and teachers, provided always that the same number of holidays be allowed in each year.

(4) When there is no county organization, the inspector, subject to an appeal to the Minister, may determine the length of time, which shall not be less than six months, during which a school shall be kept open each year, and it shall be the duty of the board to keep the school open during the whole of the time so determined.

Duties of Teachers

It shall be the duty of every teacher of a Public School:

(*a*) To teach diligently and faithfully the subjects in the public school course of study as prescribed by the Regulations; to maintain proper order and discipline in the school; to encourage the pupils in the pursuit of learning; to inculcate by precept and example respect for religion and the principles of Christian morality and the highest regard for truth, justice, loyalty, love of country, humanity, benevolence, sobriety, industry, frugality, purity, temperance, and all other virtues;

(*b*) To use the English language in instruction and in all communications with the pupils in regard to discipline and the management of the school, except where it is impracticable to do so by reason of the pupil not understanding English, but recitations requiring the use of a text-book may be conducted in the language of the text-book;

(*c*) To see that the school house is ready for the reception of pupils at least fifteen minutes before the time of opening in the morning and five minutes before the time of opening in the afternoon; to call the roll every day according to the register prescribed by the Regulations; to enter in the visitors' book visits made to the school; to give the inspector, trustees and visitors access, at all times, to the register and visitors' book; and to deliver the register, the school-house key and other school property in his possession to the board on demand, or when his agreement with the board has expired; or when for any reason his engagement has ceased.

(*d*) To classify the pupils according to the courses of study prescribed by the Regulations; to conduct the school according to a time-table accessible to pupils and visitors; to prevent the use by pupils of unauthorized text-books; to attend

regularly the teachers' institutes in the inspectorate; to notify the board and inspector of his absence from school, and the cause thereof; and to make at the end of each school term, and subject to revision by the inspector, such promotions from one class or form to another as he may deem expedient;

(*e*) To hold closing exercises of the school, and to give due notice thereof to the board, to any school visitors who reside in the school section, and, through the pupils, to their parents or guardians, and to hold such other examinations as may be required by the inspector for the promotion of pupils, or for any other purpose as the inspector may direct;

(*f*) To furnish to the Minister and the inspector any information which it may be in his power to give respecting the condition of the school premises, the discipline of the school, the progress of the pupils and any other matter affecting the interests of the school, and to prepare such reports of the board as are required by the Regulations;

(*g*) To give assiduous attention to the health and comfort of the pupils, to the cleanliness, temperature and ventilation of the school house, to the care of all maps, apparatus and other school property, to the preservation of shade trees and the orderly arrangement and neat appearance of the playgrounds, and to report promptly to the board and to the municipal health officer the appearance of any infectious or contagious disease in the school, or the unsanitary condition of the school house, outhouses or surroundings;

(*h*) To refuse admission to the school of any pupil who he believes is affected with, or exposed to, chicken pox, small pox, cholera, glanders, scarlet fever, scarlatina, diphtheria, whooping cough, measles, mumps, or other infectious or contagious disease or consumption until furnished with a certificate of a medical health officer or of a duly qualified medical practitioner approved by him that all danger from exposure to contact with such pupil has passed;

(*i*) To suspend any pupil guilty of persistent truancy or persistent opposition to authority, habitual neglect of duty, the use of profane or improper language or conduct injurious to the moral tone of the school, and to notify the parent or guardian of the pupil, and the board, of such suspension; but the parent or guardian of any pupil suspended may appeal against the action of the teacher to the board, which shall have power to remove, confirm or modify such suspension.

If a teacher negligently or wilfully permits an unauthorized book to be used as a text-book by the pupils of his school the Minister, on the report of the inspector, may suspend such teacher, and the board may also deduct from his salary a sum equal to so much of the legislative grant as has been withheld on account of the use of such book or any less sum at its discretion.

A teacher who refuses to deliver to the board any visitors' book, school register, school-house key, or any other school property in his possession shall not be a qualified teacher until restitution is made, and he shall also forfeit any claim which he may have against the board.

Change of Authorized Text-Books

An authorized text-book in actual use may be changed by the teacher for any other authorized text-book on the same subject with the written approval of the board and subject to the Regulations.

(See Circular 14 for Text-book List and Regulations.)

Agreements

(1) Every agreement between a board and a teacher shall be in writing, signed by the parties thereto, and sealed with the seal of the board.

(2) No person shall be employed or act as a teacher unless he holds a certificate of qualification.

(3) Unless otherwise expressly agreed a teacher shall be entitled to be paid his salary in the proportion which the number of days during which he has taught bears to the whole number of teaching days in the year.

(4) Every teacher shall be entitled to his salary notwithstanding his absence from duty on account of sickness for a period not exceeding four weeks in any one year of his employment, if the sickness is certified to by a physician, or in case of acute inflammatory condition of the teeth or gums, by a licentiate of dental surgery, but the period of four weeks may, in any case of sickness, be allowed and extended at the pleasure of the Board without a certificate.

(5) If at the expiration of a teacher's engagement his salary has not been paid in full, the salary shall continue to run at the rate mentioned in the agreement until paid, provided always that an action shall be commenced within three months after the salary is due and payable.

(6) All matters of difference between boards and teachers, in regard to salary or other remuneration, whatever may be the amount in dispute, shall be determined in the Division Court of the division where the cause of action arose, subject to appeal, as provided by this Act.

(7) If it appears to the Judge on the trial of an action for the recovery of a teacher's salary that there was reasonable ground for the board disputing its liability and that it was willing and offered to pay to the teacher any sum not so in dispute, the Judge may relieve the board from the liability imposed by subsection 5, in whole or in part.

General Prohibitions

(1) A teacher, trustee, inspector, or other person officially connected with the Department, or with any normal, model, public, or high school or collegiate institute, or other institution which is under the management or control of the Department, shall not sell or become or act as agent for any person to sell or to promote in any way the sale of any school library, prize or text book, map, chart, school apparatus, furniture, stationery or other article for the use of any normal, model, public, or high school, collegiate institute or other institution aforesaid or for the use of any pupil thereof, nor shall he receive, directly or indirectly, compensation or other remuneration or the equivalent for so doing.

(2) For any contravention of subsection 1 a teacher shall incur a penalty of $50; a trustee shall incur a penalty of $100; an inspector shall incur a penalty of $500; and any other person so officially connected shall incur a penalty of $100.

N.B.—*A Trustee, teacher, inspector or officer of the Department of Education who is concerned or interested in the sale of books or supplies, and anyone employing or paying him to act as agent or otherwise, are liable to the penalties imposed by The Department of Education Act.*

Appendix A

LOWER SCHOOL COURSES IN ELEMENTARY SCIENCE AND AGRICULTURE

Apparatus.—Botany and Zoology

For the work in Botany and Zoology it is desirable that each pupil should have a pocket magnifier (30-50 cents). A compound miscroscope ($11.00) should also form part of the school equipment for this work. These, together with a dozen glass slips and cover glasses and a couple of needles mounted in wooden handles will be found to be all that is necessary for the course. Breeding cages for observing the development of insects may be made from waste crayon boxes or soap boxes by covering one side or end with mosquito netting or a pane of glass.

Apparatus—Physics and Chemistry

The following apparatus is necessary in Physics and Chemistry; the probable price has been placed after each item; the pages referred to are those of *The Manual.* (See under *Reference Library* below.)

General Equipment

6 glass-stoppered bottles, 8 oz., $2.40 doz.
2 balances that weigh to centigrams, (page 186), $12.00 up.
4 dry cells, 30c. each.
100 feet insulated copper wire, No. 20, 75c.
2 gasoline blast lamps (page 171), $3.50 to $5.00.
1 sonometer, $4.50 to $20.00.
1 spool piano wire for sonometer, 10c.
1 organ pipe (page 219), $1.50 to $6.00.
1 electric bell, 45c. to $8.00.
1 incandescent lamp with wire attachment (page 225), 50c. up.
5 pounds glass tubing, 6mm. in diameter, 30c. lb.
3 pounds capillary glass tubing, opening 1 mm. in diameter, 60c. lb.
1 pound glass rod, about 6 mm. in diameter, 30c. lb.
1 square foot sheet rubber, very thin, 28c. ft.
1 bicycle pump, 25c. up.
3 metre sticks, 30c. each.
2 cylindrical measuring glasses, 250 cc., 80c. each.
1 large round bottomed flask, 1 litre, 22c.
1 atomizer or scent-bottle bellows, 25c.
1 set cork borers, set 3, 55c.
1 triangular file, 12c.
1 gross assorted corks, 50c.
2 bar magnets, 20c. each.
3 mortars and pestles, 18c. to $1.10 each.
2 pounds mercury, $1.00 lb.
1 dozen candles, 20c. doz.

Apparatus required by each pupil (or group of two)

1 celluloid ruler about 6 cm. long (page 182), 5c. each.
1 burette, 30c. to $1.50.
1 pipette, 15 cc., 13c. each.
1 spring balance, 250 grams (page 187), 90c.
1 lamp chimney, 10c. each.
1 rubber stopper with one hole to fit the lamp chimney, 20c. ; or $2.40 per lb.
1 iron stand with two rings, one 2″ diameter, the other 3½″, 40c.
1 funnel 3″ diameter, 8c.
1 barometer tube, 35c.
1 pinch cock, 10c.
1 pulley, 45c.
1 metal cart for inclined plane (page 198), $1.00.
1 chemical thermometer (page 201), 70c.
1 round bottomed flask, 10 oz., 10c.
1 flat bottomed flask, 8 oz., 10c.
1 rubber stopper with two holes to fit flasks, 10c. each.; or $2.40 lb.
1 square of plate glass with two opposite polished edges (page 212), 28c. each.
1 prism of glass with flat ends (page 211), 40c. to 70c.
1 tuning-fork (page 215), $1.15.
1 compass needle (page 221), 55c.
1 sheet of zinc, 5″ x 2″,
1 sheet of copper, 5″ x 2″, } 15c. set.
2 knitting needles, 5c.
6 test-tubes, 5″ x ⅝″, 18c. doz.
1 test-tube, 6″ x ⅞″, 25c. doz.
1 hard glass test-tube, 5″ x ⅝″, 5c. each.
1 watch glass, 2″ diameter, 30c. doz.
1 crucible with cover, 1½″ diameter, 25c.
1 clay triangle, 75c. doz.
1 evaporating dish, 3″ diameter, 13c.
1½ feet rubber tubing to fit glass tubing, 10c. per ft.
3 pickle bottles, 50c. doz.
1 test-tube rack, 25c. to 60c.
1 granite-ware dish, 8″diameter, 4″ high (page 171), 15c. each.

Reagents

¼oz. magnesium ribbon, $1.25 oz.
3 packages filter paper, 5″ diameter, 18c. each.
1 oz. phosphorus (yellow), 15c.
4 oz. mercuric oxide, 20c. oz.
8 oz. potassium chlorate, 50c. lb.
4 oz. manganese dioxide, 10c. lb.
4 oz. sulphur, 7c. lb.
1 oz. sodium, 50c. lb.
1 lb. granulated zinc, 20c. lb.
1 lb sulphuric acid, 7c. lb. ; bottles, 15c.
Litmus paper, 40c. doz. books.
1 lb. marble (get at stone cutter's), 10c. lb.
1 gallon wood alcohol, $1.50.

1 quart gasoline, 12c.; bottle, 10c.
1 lb. quicklime, 18c. lb.
2 lbs. iron filings, 10c. lb.
6 inches platinum wire, 15c. inch.

For progress in the School Museum and natural history side of the subject collections of specimens of the local fauna will have to be made. The school museum should be a thing of gradual growth, and great care should be taken in the selection of the material. As occasion offers, it should be provided with specimens of local fish, frogs, reptiles, birds, insects, etc.

General

A small cupboard should be provided for storing apparatus and chemicals, and a simple laboratory table for carrying out experiments. The table should be kept for this use alone where there is no laboratory.

Reference Library

A Manual of Suggestions for Teachers of Science in the Fifth Forms of the Public Schools and the Lower School of the High Schools, has been prepared by the Department, and a copy has been sent to each school. Other copies may be obtained at 50 cents each, on application to the Deputy Minister.

No Flora or Fauna is authorized as a text-book for the pupils, but it shall be the duty of the Board to provide in the school library a sufficient supply for the pupils' use.

Other works of reference shall also be provided, and the pupils should be encouraged to use them as supplementary reading, never as text-books or as substitutes for original work.

COURSES OF STUDY

1. Zoology

General Scope of the Work: In this course in elementary Zoology the two sides of animal study are distinguished and outlined. On the one hand, is prescribed a general laboratory course which embodies the simple morphological study of common forms, representing the chief animal types. On the other hand, an outline of work on the natural history side of the subject is suggested. These are not two distinct courses. It is intended that the work of the laboratory shall be such as to help in the interpretation of the outdoor observations and incite to deeper enquiry; while the studies in natural history will make the indoor study interesting and necessary. The work in natural history will be a logical and safe foundation for the work in science taught through modern laboratory methods.

Outdoor work: The teacher's immediate responsibility lies in the laboratory work. Outdoor work, which will of necessity vary with the locality, must be carried on to a very large extent without his direct supervision. But the teacher should encourage and direct the pupils, devoting a fair portion of the time of the class to discussions and reports on their independent work. Arrangements should be made for field excursions on suitable occasions.

A separate record of outdoor observations shall be kept by the pupils.

Indoor Study of Living Animals: The morphological studies in the laboratory are, wherever possible, to be supplemented or preceded by observation on living specimens. For this purpose, provision will be needed for suitable aquaria and vivaria, where the moving, breathing, and feeding of the living animals may be within ready view of the pupils. *Moreover, these morphological studies are not to end in the study of form; behind the observation of the form, there must be a constant effort to interpret the* MEANING *of the form, to show the relation of form and function.*

2. Botany

Mutatis mutandis, the above remarks will apply also to the work in botany. In particular it is urged upon the instructor that he should constantly stimulate the effort to interpret the meaning of the forms under observation—to discover where possible the relation between form and function.

3. Physics and Chemistry

Beside the experimental work by teacher and pupils, practice in the preparation and manipulation of apparatus should form part of the courses in both Physics and Chemistry.

4. Agriculture

In order to provide for pupils whose future interests may be identified with some form of rural activities, an optional course has been provided under the heading, *Work in Agriculture.* For assistance in introducing or carrying on this work, teachers should apply to the *Director of Elementary Agricultural Education,* Ontario Agricultural College, Guelph, who will supply material for demonstration and experimental plots as well as instruction sheets.

Throughout the courses pupils may choose between the outdoor work in Science and the work in Agriculture. Once made, the choice must be maintained throughout the course.

First Year—September and October

Laboratory Work

Invertebrates.—Class study of a grasshopper, a spider, a centipede.

1. Comparison of a grasshopper with a cricket or cockroach, leading to the recognition of the order Orthoptera.

2. Study of one of the following representatives of the other orders: a butterfly, a bee, a potato-beetle, a house-fly, a dragon-fly.

Vertebrates.—*Birds*: Study of external characters of domestic fowl, pigeon or other common bird; instruction regarding the protection of birds by law; comparison of the bills, wings, legs, and feet of different types of birds; chief skeletal characteristics of birds; structure of feathers.

Outdoor Work

Observation of the habits and development of the insects studied in the laboratory; preparation of a small collection of insects; how insects visit and use flowers: how spiders weave their webs and secure their food; collection of caterpillars for observation of their metamorphosis during the following winter and spring.

Recognition of the common wild birds of the locality; observation of their habits and of their adaptation to their different modes of living: times and modes

of their southward migrations; recognition of the different varieties of pigeons, ducks, geese, and chickens that may be seen in the neighbourhood or at fall fairs.—*For the Winter*: Observation of the winter birds, their feeding habits, their dangers, their modes of protection.

Work in Agriculture

POULTRY.—Characteristics of different breeds of domesticated fowl; best methods of housing, feeding, managing, fattening, dressing, and marketing fowl: preserving eggs.

BEES.—Origin of breeds, management, habits, and value to fruit growers.

APRIL, MAY, AND JUNE

Laboratory Work

INVERTEBRATES.—Class study of the mosquito, the fresh water clam and the earthworm.

VERTEBRATES.—*Fishes*: Study of the external characters of a common fish; chief skeletal characteristics; structure of gills and the manner of breathing.

AMPHIBIANS: Study of the external characters of a common frog; of its development from the egg; economic importance of frogs and toads.

Outdoor Work

Observation on the life histories and habits of economic insects, such as those suggested for study in the next term: collections of these insects; observations on the prevalence of mosquito larvæ in wet places and their destruction by kerosene; observations of the means employed by gardeners and others for combating insect pests; examination of spraying appliances; observations on bee-keeping and the production of honey.

Observation of the habits of earthworms, such as their appearance after rain, their castings on the garden paths, their depth in the ground in dry weather, their injury to lawns, their destruction by robins.

Recognition of the common fish of the district and observation of their habits; observation of the food fish sold in the local market; methods of rearing fish in government fish hatcheries.

Recognition of the common frogs, tree frogs, toads, and salamanders; observations of their habits and calls.

Observation of spring migrations of birds, and the feeding and nesting habits of summer residents; recognition of bird songs.

SECOND YEAR—SEPTEMBER AND OCTOBER

Laboratory Work

INVERTEBRATES.—Class study of examples of such beneficial and injurious insects as may have local interest in affecting field crops, gardens, orchards, forests, cattle, or the household.

VERTEBRATES. *Mammals*: Study of the external characteristics of a cat, dog, or rabbit; comparison of the hair, teeth, feet, and locomotion of some typical mammals; chief skeletal characteristics of a mammal, such as the cat, including recognition and relationship of the larger bones.

Outdoor Work

Observation of the conspicuous insect pests of the season, the methods of attack, the injury done by them, the effect of spraying or other treatment; collection of economic interests.

Recognition of habits of our wild and domestic mammals; economic uses of domesticated mammals; recognition of the different breeds of farm animals, horses, cows, sheep, swine; comparison of the different breeds of dogs, cats, rabbits; preparation for winter and winter habits of wild animals found in the district; uses and values of skins and furs.

Work in Agriculture

Live Stock.—Characteristics of different breeds of farm animals, their origin, uses, care, feeding, and breeding; judging and marketing.

Insects.—Special study of economic insects; spraying mixtures, and spraying machines.

April, May, and June

Laboratory Work

Invertebrate.—Class study of a crayfish and a wood louse (*Oniscus*).

Vertebrates.—*Reptiles*: Study of the external characteristics of a snake and a turtle.

Review.—General view and comparison of the characteristics of the larger groups of animals taken up in the course, summarizing and classifying.

Outdoor Work

Continuation of the observation of the life and habits of birds and other animals studied previously.

Recognition of the common snakes and turtles of the locality and observation of their habits; how they pass the winter; how the young are hatched.

Botany

Remarks similar to those introducing the course in zoology will apply also to the work in botany. In particular it is urged upon the instructor that he should constantly stimulate the effort to interpret the meaning of the forms under observation—to discover where possible the relation between form and function.

First Year—September and October

Laboratory Work

The Plant as a whole: A detailed study of some common plant, such as a petunia or a buttercup, taking up the structure and functions of all the parts in succession; root, stem, foliage-leaves, flower-leaves, fruit, and seed; the study at this stage to be such as can be carried on with the aid of an ordinary lens.

Fruits: Structure and classification of the simpler fruits, such as pea or bean, shepherd's purse, poppy, apple, tomato, grape, plum, maize, or wheat, maple, etc.; adaptations for dispersal of seeds.

Seeds: Practical study of some common seeds, such as pea, bean, morning-glory, representing dicotyledons; maize, wheat, onion, representing monocotyledons; pine or spruce, representing gymnosperms; form, markings, parts and their functions, position of stored food.

Preparations for Winter. Annuals (including winter annuals, such as winter wheat), biennials; perennials. Storage of reserve food in root, stem, leaf and seed; study of winter buds, their arrangement, structure, and means of protection; the fall of fruit and leaf; interpretation of marks on trees and shrubs.

Outdoor Work

Recognition of common annuals, winter annuals, biennials and perennials of the garden and the field; observation of winter beds, of change of colour, and of time of falling of leaves of trees and shrubs; study of marks on trees and shrubs; collections of common flowering plants (including weeds), and weed seeds to be begun.

Work in Agriculture

Recognition and comparisons of the cereals and legumes commonly grown in the locality; methods of fall cultivation in garden, orchard and farm; observation of rotations practised in the neighbourhood by successful farmers; discussions, etc., on articles in the agricultural papers and Government bulletins.

APRIL, MAY, AND JUNE

Laboratory Work

Germination of Seeds: Simple experiments to illustrate the more important phenomena and requirements of germination and growth, *e.g.*, need of air, warmth, and moisture; evolution of carbon dioxide; how and to what extent water is absorbed; germinating power.

Artificial Plant Propagation: Cuttings, layering, budding, grafting.

Study of Spring Flowers: Plant-description and identification by means of a flora; relation of flower-structure to mode of pollination; meaning and significance of cross-pollination.

Roots: Varieties of root-forms; root-hairs; root-cap; region of growth.

Stems: Expanding of winter buds; varieties of stem-forms: erect, prostrate, climbing, twining, subterranean, aquatic; adaptation of form to habit; spines, prickles, tendrils: their forms and uses; stem-structure in dicotyledons and monocotyledons.

Foliage-Leaves: General structure, including epidermis, stomata, chlorophyll, veins; protective structures, such as hairs, waxy coatings, etc.; form and arrangement of leaves in relation to sunlight and shedding of rain: sleep-movements.

NOTE.—The preceding work on roots, stems, and leaves may be taken up incidentally in connection with the study of spring flowers. In any case, the pupil's records must show that all the topics have been taken up.

Outdoor Work

Observation and recording of the time of leafing and flowering of common wild and cultivated plants; habitats of spring-flowering plants; conditions governing growth; insect visitors; methods of pollination; observation of opening and closing of flowers as shown by dandelion, tulip, hepatica, etc.; time of sowing and rate of germination of garden and farm seeds; mode of climbing of such plants as sweet pea, morning-glory, grape, Boston ivy, Virginia creeper, hop, galium, clematis, etc.; leaf-arrangement to secure best exposure to light and to shed rain; diurnal and nocturnal positions of leaves, such as those of clover, honey-locus, oxalis (so-called shamrock), etc.; collections begun in the autumn to be continued.

Work in Agriculture

Work in experimental and demonstration plots to furnish material for observation and class study; as, for example, a wild flower garden, a plot for climbing plants, a plot for propagation of currants, seedling apples, etc.; study of the best methods of preparing the ground, planting the seed, and caring for garden vegetables and flowers.

SECOND YEAR—SEPTEMBER AND OCTOBER

Laboratory Work

Composites: Study of typical composites, such as dandelion, burdock, and ox-eye daisy.

Weeds: Identification of common forms; their seeds; how they spread; and how they may be controlled.

Fungi: Recognition and mode of life of mushroom, puff-ball, polypore, as saprophytic forms; and apple scab, lilac mildew, wheat rust, black knot, or other common type, as a parasitic form.

Physiological Experiments: *Roots.* Simple experiments to illustrate root-functions, *e.g.*, absorption by osmosis, growth towards moisture.

Soils: Soluble and insoluble materials in soils, and importance of each to the plant: simple experiments in illustration.

Stems: Simple experiments to illustrate stem-functions, *e.g.*, conduction of cell-sap, heliotropism, rotation of the end of the stem in twiners and climbers.

Foliage-leaves: Simple experiments to illustrate leaf-functions, *e.g.*, transpiration, manufacture of starch in sunlight, disappearance of starch in darkness, exhalation of a gas by green water-plants in sunlight, exhalation of carbon dioxide.

Outdoor Work

Recognition and collection of autumn flowering-plants; collection and recognition of weed seeds in grain screenings; observation of injurious effects of parasitic fungi, as seen in the rotting, etc., of fruits, such as apples, grapes, plums, etc.

Work in Agriculture

Special study of weeds, weed seeds, and plant diseases; systematic studies of varieties of apples, grapes, etc., best suited to locality; best methods of handling, storing, shipping, and marketing fruit; discussions, etc., on articles in agricultural papers and Government bulletins.

APRIL, MAY, AND JUNE

Laboratory Work

Trees: Common orchard and forest trees: Modes of branching, identification by leaves, bark, wood; uses; special study of the conifers; the bud, leaf, and flower.

Flower Study Continued: Identification of cultivated and wild spring flowers; study of a common grass, such as orchard-grass, Indian corn, or wheat.

Ferns: General structure and habits of a common fern.

Economic Products: Summary of economic uses of plants: for timber, food, clothing, decoration, medicine, etc.

Review: General view and comparison of the characteristics of the larger groups of plants taken up in the course, summarizing and classifying.

Outdoor Work

Observations on plant-societies: plants of the forest, the meadow, the roadside, the pond, the marsh, the garden (weeds), the rocks, noting adaptations to environment, observation of nodules on the roots of leguminous plants, and enrichment of the soil thereby; observations of imported and domestic economic plant-products in market, store, and factory.

Collections to be continued.

Work in Agriculture

Work in plots for growing tree seedlings at the school, and in plots for representing economic plants in botanical families or groups, as wheats, grasses, corns, legumes, vegetables of the cress family, etc.; work in experimental plots for testing value of inoculating seed of legumes, different fertilizers or different methods of cultivation, etc.; observation of fields entered in the local Agricultural Society's Field Crop Competitions; work and methods of the Dominion Seed Growers' Association.

Physics

First Year—November to April

Introductory: Measurement in Metrical and English units of length, area, volume, and mass; structure and use of the Balance.

The Three States of Matter: Defined and explained; Molecular Theory.

Mechanics: The principle of the mechanical powers; some of their more important simple applications.

Hydrostatics: Pascal's Law, statement and verification, some of its more important applications; pressure of liquids in its relation to direction, depth; density of liquid, area pressed, and the shape of containing vessel; Archimedes' principle; specific gravity, common methods of finding specific gravities of solids and liquids.

Pneumatics: Study of the properties of a gas as exhibited in air as a type; proof that air has weight, occupies space, and exerts pressure; construction of the barometer; the relation between the volume and pressure of a gas; proof of Boyle's Law; practical applications of air pressure, air-pump, common pump, siphon, air-brakes, air-tools; meaning of wind pressure; some of the more important applications of wind pressure.

Chemistry

Second Year—November to April

A study of air and its constituents; a study of water and its constituents; a study of limestone and its decomposition-products, quicklime and carbon dioxide; mixture, chemical compound, element, physical and chemical change.

Note.—In both Physics and Chemistry, practice in the preparation and manipulation of apparatus should form part of the course.

Physics

Second Year—November to April

Heat: Nature and source of heat; experiments to illustrate the expansion of solids, liquids, and gases by heat; some practical applications of the principle of expansion; the anomalous expansion of water, its significance; meaning of temperature as compared with quantity of heat; explanation of the construction of the mercury thermometer; graduation of the thermometer in the centigrade and the Fahrenheit scales; meaning of latent heat, applications.

Sound: Nature and propagation of sound; pitch of sound; consonance and resonance; string musical instruments, wind musical instruments; reflection of sound echoes.

Light: Nature and propagation of light; simple experiments illustrating the reflection and refraction of light; dispersion of light; colour of bodies.

Magnetism and Electricity: Magnets; laws of magnetic attraction and repulsion; polarity; magnetic induction; terrestrial magnetism; construction of simple voltaic cell; decomposition of water by electricity; electro-magnet; electric bell; heating and lighting effects of the current.

Work in Agriculture

Measurements: Exercises in the use of the common surveyor's chain and comparisons with metric measurements; determination of weights of measured bushel of common grains, and of cubic foot of water, milk, sand, gravel, or grains.

Soils: Simple physical analysis of samples; comparative weights of different kinds of soil; estimation of water-holding capacity, of air content, of amount of humus; effect of frost, lime and humus on clay.

Milk and other Foods: Estimate of fat in milk by means of Babcock test; use of lactometer in determining richness or presence of adulteration; simple analysis to show albumin, casein, and sugar; pasteurization; cream separator; comparisons of flour for strength; estimate of moisture in vegetables.

Common Commodities of Farm and Household: Practical acquaintance with Lime-Sulphur and Bordeaux Mixture, fertilizers, disinfectants, poisons, etc.

Appendix B

ART MODELS

NOTE.—Adequate provision of type solids, models of common objects, ceramics, and plaster casts is indispensable.

1. *Type solids* made of wood and painted white as follows; the probable price is placed after each item:

*Cube, 4 inches face, solid	$0 40
Cube, 4 inches face, incised faces	45
Cube, 4 inches face, quartered diagonally	50
*Sphere, 4 inches diameter, solid	50
Sphere, 4 inches diameter, halved and quartered	65
*Hemisphere, 4 inches diameter	45
*Cylinder, 4 x 8 inches solid	50
Cylinder, 4 x 8 inches, truncated	1 00
*Cone, 4 x 8 inches, solid	60
Cone, 4 x 8 inches, truncated	1 00
*Square Prism, 4 x 8 inches	50
Square Prism, 4 x 8 inches, divided diagonally	80
Square Plinth, 2 x 6 inches	40
*Oblong Block, 4 x 3 x 8 inches	45
*Square Pyramid, 4 x 8 inches	50
Square Pyramid, 4 x 8 inches, truncated	90
*Right-angled Triangular Prism 4 x 5⅝ x 8 inches	50
*Equilateral Triangular Prism, 4 x 8 inches	50
Pentagonal Prism 4 x 8 inches	50
Hexagonal Prism, 4 x 8 inches	65
Hexagonal Pyramid, 4 x 8 inches	65
Octagonal Prism, 4 x 8 inches	50
Circular Plinth, 2 x 6 inches	40
*Flight of Three Steps, 8 inches long, 2 inches tread, 1⅔ inches riser	65
*Cross, 2 x 6 inches	35
Chimney Model, 4 x 8 inches, divided and dowelled	80
Frame, 12 inches square, mortised	40
*Vase, 8 x 12 inches	2 25
*Ovoid, 4 x 6 inches	65
*Ellipsoid, 4 x 6 inches	65

NOTE.—The models marked with an asterisk are indispensable. Where the amount to be spent on Art models is $50, about $10 should be spent on type solids. Care should be taken not to over-emphasize their value in the course.

2. *Common objects* in wood, metal, or crockery; fruits, flowers, and vegetables in season (or models thereof in clay or wax); mounted birds and other animals.

3. *Ceramics*: Pots, kettles, drinking-glasses, pitchers, cups, vases, candlesticks, jardinieres, etc.

NOTE.—The ceramics should be chosen, not only for their individual beauty but for their form value in grouping and their colour value in a general scheme of colour harmony.

4. *Plaster casts*: Panels, animals, figures, busts, groups of figures, and historic ornaments.

5. *Objects or parts of objects typical of local manufactures.* For example: woodenware, parts of machines, samples of fabrics, wall paper, etc.

6. *Unique objects*, suitable for decorative purposes: Chinese lanterns and parasols, objects of Indian manufacture, ancient arms, etc.

NOTE 1.—Carbon reproductions, etchings, and engravings of famous buildings, landscapes, and figures by famous masters should also be provided, to exemplify the laws of composition and to give the pupils some knowledge of the work of the great artists. These should be provided primarily as school decorations; they are not to be counted as Art Models.

Appendix C

GEOMETRY

A.—Constructions

To construct a triangle with sides of given lengths.

To construct an angle equal to a given rectilineal angle.

To bisect a given angle.

To bisect a given straight line.

To draw a line perpendicular to a given line from a given point in it.

To draw a line perpendicular to a given line from a given point not in the line.

Locus of a point equidistant from two given lines.

Locus of a point equidistant from two given points.

To draw a line parallel to another, through a given point.

To divide a given line into any number of equal parts.

To describe a parallelogram equal to a given triangle, and having an angle equal to a given angle.

To describe a parallelogram equal to a given rectilineal figure, and having an angle equal to a given angle.

On a given straight line to describe a parallelogram equal to a given triangle, and having an angle equal to a given angle.

B.—Theorems

The sum of the angles of any triangle is equal to two right angles.

The angles at the base of an isosceles triangle are equal, with converse.

If the three sides of one triangle be equal, respectively, to the three sides of another, the triangles are equal in all respects.

If two sides and the included angle of one triangle be equal to two sides and the included angle of another triangle, the triangles are equal in all respects.

If two angles and one side of a triangle be equal to two angles and the corresponding side of another, the triangles are equal in all respects.

If two sides and an angle opposite one of these sides be equal respectively in two triangles, the angles opposite the other pair of equal sides are either equal or supplemental.

The sum of the exterior angles of a polygon is four right angles.

The greater side of any triangle has the greater angle opposite it.

The greater angle of any triangle has the greater side opposite it.

If two sides of one triangle be equal respectively to two sides of another, that with the greater contained angle has the greater base, with converse.

If a transversal fall on two parallel lines, relations between angles formed, with converse.

Lines which join equal and parallel lines towards the same parts are themselves equal and parallel.

The opposite sides and angles of a parallelogram are equal and the diagonal bisects it.

Parallelograms on the same base, or on equal bases, and between the same parallels, are equal.

Triangles on the same base, or on equal bases, and between the same parallels, are equal.

Triangles equal in area, and on the same base, are between the same parallels.

If a parallelogram and a triangle be on the same base, and between the same parallels, the parallelogram is double the triangle.

Expressions for area of a parallelogram, and area of a triangle.

The complements of the parallelograms about the diagonal of any parallelogram are equal.

Appendix D

MANUAL TRAINING FOR FORM V

First Year

Drawing.—Review of the courses of Forms III and IV. Simple plans and elevations. Correct use of drawing board, T-square, triangles and compasses. Construction of the common geometrical figures. Simple lettering and figuring. Working drawings of objects made, either full size or to scale.

Wood Work.—Review of Public School course. Growth, structure, and identification of the woods used in the manufactures of the locality. Warping, twisting, checking—how caused and counteracted. Making of simple objects according to drawings previously prepared. Proper use of nails, screws, and glue. Use of simple joints in articles made; for example, end half lap, centre half lap, mitre, housing. Use and mechanical construction of common woodworking tools as exemplified in the making of a series of useful objects. Construction of simple school apparatus.

Second Year

Drawing.—Adjusting drawing instruments. Elementary orthagraphic and isometric projection. Simple sections. More advanced geometrical drawing. Free-hand dimensioned sketches. Drawing of objects for woodturning, forging or machine shop courses. Inking, tracing, lettering, and blue printing. Working drawings of objects made.

Wood Work.—Growth, structure, and identification of the woods used in the locality. Tool sharpening. Common joints used in various kinds of wood work—scarfing, simple dovetail, mortise and tenon, tongue and grooved joint—their use in making objects such as boxes, drawers, tables, book-cases, etc. Fastenings with dowels, pins, cleats, wedges, etc. Calculations from drawings of lumber required for articles made and cost. Every alternate piece of work must be kept for inspection.

Various methods of finishing, as staining, fuming, filling, shellacing, oiling.

Wood Turning.—Explanation of the lathe, its action, speed, parts, care, and use. The gouge, correct position, turning rough cylinder. The skew chisel; reason for grinding both sides and at an angle. Concave surfaces with skew chisel; review exercises. Irregular curves and spindle work. V grooves, beads and hollows. The introduction of hard wood and sandpaper; exercises in turning handles. Face plate turning, chuck work, boxes with covers, powder box, napkin ring, goblet, etc. Every piece of work must be kept for inspection.

Forging.—The forge, the fire, the heat, the height of anvil, and its position.

The ordinary tools, how to use and care for them. Hammer, sledge, chisel, fuller, and swage. Drawing, forming, upsetting, bending, and twisting iron, stamping and forge-blacking the finished piece, exercises of simple design and con-

struction, gate hook, turning eye and hook. Scarfing, bending, and welding. Every piece of work must be kept for inspection.

Machine Shop Practice:—Simple ornamental work in brass, copper and iron. The making of simple objects such as watch fobs, paper knives, blotter corner, trays, bowls, etc.

Simple clipping and filing. Use of measuring and marking tools.

An elementary study of the engine lathe; its parts, adjustment and working. Proper tool angles and cutting speeds and feeds. The exercises taken should, where possible, involve completed objects. All work must be kept for inspection.

Appendix E

HOUSEHOLD SCIENCE FOR FORM V

First Course

Hand Sewing.—Review of the courses of Forms III and IV. Elementary stitches. Sewing on buttons, hooks, and tapes. Darning and mending. Hemming, running, basting. Making bags, aprons, potholders, towels, cuffs, etc.

Cookery.—Review of Public School Course. Methods of cooking, boiling, simmering, steeping, steaming, broiling, pan broiling, sauteing, frying, baking. Care of kitchen utensils, etc. Dishwashing. Sanitation and disposal of waste.

Second Course

Hand Sewing.—Advanced stitches applied to small garments, hemmed patch, fine mending, making and working buttonholes. Instruction in the use of patterns. Making underware.

Cookery, etc.—More advanced study of methods of cooking. Effects of heat upon common food materials. Care of the stove. Fuels—coal, wood, gas, electricity, kerosene, alcohol. Planning, cooking, and serving a meal. Composition of foods and their functions in the body.

Third Course

Hand Sewing.—Taking measurements and drafting patterns. Cutting out and making simple garments. The use and care of sewing machine and attachments.

Cookery, etc.—Fruit preserving, canning, etc. Soft and hard water, soap, soda, etc., their effect upon various fabrics. Removal of stains. Preparation of food for invalids. Diet for infants and children. Furnishing, with consideration of cost, comfort and good taste. Simple home nursing. Sanitation, disposal of waste, etc. Elementary course in laundry work.

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